

REGULATION III - CONTROL OF AIR CONTAMINANTS

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Revised 07/13/88

Revised 04/07/93

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS
RULE 313
INCINERATORS

SECTION 100 - GENERAL

101 PURPOSE: To establish standards for incinerators, burn-off ovens and crematories ~~that are used for refuse disposal~~ and to limit particulate emissions from ~~incinerator~~ burning in these types of units.

102 APPLICABILITY: This rule applies to:

102.1 All incineration except the incineration of hazardous waste as identified under subtitle C of the Resource Conservation and Recovery Act, or the incineration of ~~medical waste.~~ hospital, medical or infectious waste subject to Rule 317 of the Maricopa County Air Pollution Control Regulations or subject to 40 CFR Part 60 Subpart Ec, 40 CFR Part 60, Subpart CCCC or 40 CFR Part 60, Subpart DDDD.

102.2 Burn-off ovens used in metal salvage operations or used to remove non-metallic coatings from metal parts by the application of heat that meet at least one of the following conditions:

- a. Charge burning capacity of greater than 25 lb. per hour;
- b. Internal oven volume greater than 1 cubic yard;
- c. Fuel burning capacity of primary chamber greater than 200,000 Btu/hr.

102.3 Crematories

103 EXEMPTIONS: The following types of combustion equipment are exempt from this rule:

103.1 Laboratory ovens;

103.2 Environmental test chambers;

103.3 Ovens used in research facilities;

103.4 Flares;and

103.5 Curing or drying ovens that are operated at temperatures lower than 600° F;and

103.6 Electric induction furnaces

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply: See Rule 100(General Provisions and Definitions) of these rules for definitions of terms that are used but not specifically defined in this rule.

201 AFTERBURNER - The heating device associated with an incinerator, burn-off oven or crematory that is designed to provide excess air and heat for complete combustion of the gases in the primary chamber so as to control particulate emissions.

202 BURN-OFF OVEN - A heating device used to remove materials such as oils, greases, paints, coatings, rubber and insulation from other materials or parts by burning or charring.

203 INCINERATOR — Any equipment, machine, device, contrivance or other article and all appurtenances thereof used for the destruction or reduction by burning of combustible refuse or salvage material. **COMBUSTIBLE REFUSE** - Any solid or liquid combustible waste material containing carbon in a free or combined state.

204 CONDITIONING PERIOD - A period of time (168 hours minimum) during which the COMS is operated without any unscheduled maintenance, repair, or adjustment prior to initiation of the operational test period.

204205 CONTINUOUS OPACITY MONITORING SYSTEM (COMS) - The total equipment necessary for the determination of opacity of emissions which provides a permanent, uninterrupted record of opacity readings

205206 MEDICAL WASTE — Any non-gaseous waste, including infectious wastes, which is generated in the diagnosis, treatment, or immunization of human being or animals, in research pertaining thereto, or in production or testing of biological agents and substances. Medical waste does not include any wastes identified under subtitle C of the Resource Conservation and Recovery Act (RCRA) as hazardous or as household waste, but includes those pharmaceuticals which are not hazardous by subtitle C of RCRA. **CREMATION** - The technical process of reducing a corpse

(human or animal) to bone fragments and ashes in a controlled retort or furnace using heat and/or flame. The reduction takes place through heat and evaporation. Cremation shall also include the processing and pulverization of the bone fragments.

206207 ~~**MULTIPLE-CHAMBER INCINERATOR**~~—Any incinerator consisting of two or more refractory lined combustion chambers in series, physically separated by refractory walls, interconnected by gas passage ports or ducts designed for maximum combustion of the material to be burned. **CREMATORY** -A retort used for the cremation of corpses (human or animal), body parts and associated wrappings. This term may also be used to refer to an establishment wherein these corpses are cremated. A crematory may be considered existing or new, dependent upon the date it was constructed. If it was constructed, modified, or commenced operation, including the contractual obligation to undertake and complete an order for a crematory, prior to (date of adoption of this revised rule), then it is an existing crematory.

208 **ELECTRIC INDUCTION FURNACES** - A furnace or oven that is used to melt metals by use of electricity as the source of power or an alternating current electric furnace in which the primary conductor is coiled and generates by electromagnetic induction a secondary current that develops within the metal charge.

207209 **FLUE** - A duct or passage, such as a stack or chimney, for air contaminants.

208210 **HOSPITAL WASTE** - Discards generated at a hospital or clinic, except unused items returned to the manufacturer. The definition of hospital waste does not include does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.

211 **INCINERATION** - The process of burning involving the chemical reaction of combustible waste materials with air in which the primary purpose is the destruction and reduction in size and mass of the combustible material.

20921 2 **MEDICAL WASTE** - Any non-gaseous waste, including infectious wastes, which is generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in production or testing of biological agents and substances. Medical waste does not include any wastes identified under subtitle C of the Resource Conservation and Recovery Act (RCRA) as hazardous or as household waste, but includes those pharmaceuticals which are not identified as hazardous by subtitle C of RCRA. It does include cultures and stocks of infectious agents and human pathological waste; human blood and blood products, sharps, needles and broken glass that were in contact with infectious wastes; animal wastes exposed to infectious wastes, isolation wastes and unused sharps, needles and syringes. An expanded definition of medical waste is found in 40 Part 60 Subpart Ec.

210213 **METAL SALVAGE OPERATIONS** - Any source operation in which combustion or pyrolysis is carried on for the principal purpose, or with the principal result, of recovering metals which are introduced into the operation as essentially

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pure metals, or alloys thereof, by oxidation of physically intermingled combustible material. Operations in which there is a complete fusion of all such metals are not included in these types of operations **such as in an electric induction furnace.**

211214 **MULTIPLE-CHAMBER STARVED AIR-INCINERATOR** - Any incinerator consisting of two or more refractory- lined combustion chambers in series, physically separated by refractory walls, interconnected by gas passage ports or ducts designed for maximum combustion of the material to be burned. The two chambers are the:

211.1214.1 Primary Chamber - Initial compartment wherein the majority of waste volume reduction or heat treatment occurs by combustion. Primary chambers are operated at lower temperatures than secondary chambers or afterburners.

211.2214.2 Secondary Chamber - Compartment which operates at excess air conditions wherein destruction of gas-phase combustion products occurs. Passage ports, ducts, flues, chimneys, or stacks with burners shall not be considered controlled secondary chambers unless the combustion zone exhibits design measures for the retention of the gas stream in the chamber, turbulence or mixing, and the availability of excess air, as determined by engineering analysis.

215 **NIGHT BURNING** - Burning that occurs after sundown and before **the following sunriseup.**

216 **OPERATIONAL TEST PERIOD** - A period of time (168 hours) during which the COMS is expected to operate within the established performance specifications without any unscheduled maintenance, repair or adjustment.

212217 **PATHOLOGICAL WASTE** - Waste material that consists of only human or animal remains, anatomical parts and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

213218 **RESIDENCE TIME**- The average time that gases spend in a defined space, also known as bulk gas average residence time.

SECTION 300 - STANDARDS

301 CONTROLS REQUIRED: No person shall burn any combustible refuse in any incinerator, or perform metal salvage operations or remove materials utilizing a burn-off oven, or burn human or animal corpses in a crematory within Maricopa County ~~except in an approved multiple-chamber incinerator, equipped with auxiliary fuel, or equipment equally effective for the purposes of air pollution control as an approved multiple-chamber incinerator using the following air pollution control equipment:~~

301.1 Incinerators: Incinerators shall consist of a multiple-chamber incinerator that shall reach at least a minimum temperature of 1600°F in the secondary chamber or afterburner, with a residence time of at least 1 second in the secondary chamber or afterburner during the period of combustion in order to destruct the combustion products.

301.2 Burn-Off Ovens: Burn-off ovens shall consist of an oven with at least two chambers. The secondary compartment or afterburner shall reach a minimum temperature of at least 1400°F with a residence time of at least 1/2 second during the period of combustion in order to destruct the combustion products.

301.3 Crematories: Crematories shall consist of an incinerator with at least two chambers. For an existing crematory, the secondary compartment or afterburner shall reach at least a minimum temperature of 1400°F with a residence time of at least 1 second during the period of combustion in order to destruct the combustion products. For a new crematory, the secondary compartment or afterburner shall reach a minimum temperature of at least 1600°F with a residence time of at least 1 second during the period of combustion in order to destruct the combustion products. Cremation in the primary chamber shall not begin unless the secondary chamber combustion zone temperature is equal to or greater than 800°F for existing crematories and 1000°F for new crematories.

301.4 Alternate Operating Conditions: If the manufacturer's optimum design specifications for the minimum temperature or residence time of an incinerator, burn-off oven or crematory are different than the temperatures or residence times set forth in subsection 301.1, 301.2 or 301.3, the manufacturer's specifications may be used instead, providing that the owner or operator demonstrates compliance with Sections 302 and 303.

301.5 Additional Operating Conditions for Cremating Large Bodies:

Alternate operating temperatures and special procedures are required for the cremating of large bodies (over 300 lbs.) that are different than the temperatures or residence times set forth in subsection 301.1, 301.2, 301.3, these alternate times and temperatures may be used providing that the owner or operator demonstrates compliance with Section 302 and 303.

~~302 PROHIBITION – NIGHTTIME BURNING:~~ No incinerator burning shall be conducted between sunset and the following sunrise. **EMISSIONS STANDARD- OPACITY:** Notwithstanding the provisions of Regulation III, Rule 300 (Visible Emissions), no person shall cause, suffer, or allow the emission into the atmosphere from any incinerator, burn-off oven, or crematory, for an aggregate of more than 30 seconds in any 60 minutes, any air contaminant which is a shade or density darker than 20 percent opacity.

~~303 OPERATING EQUIPMENT – PERFORMANCE TESTING:~~ No person shall burn combustible refuse in any incinerator until it has passed a performance test based on the emission standards in Sections 305 and 306 of this rule **EMISSIONS STANDARD - PARTICULATES:** No person shall cause, suffer, allow or permit the emission into the atmosphere from any incinerator, burn-off oven, or crematory, or electric induction oven, particulate matter which exceeds 0.080 grain per cubic foot of dry flue gas at standard conditions adjusted to 7 percent

oxygen (O₂) in the exhaust gases and calculated as if no auxiliary fuel had been used .

304 ~~INCINERATOR USE:~~ ~~Approval of the use of an incinerator by the Control Officer is not intended to exempt the incinerator, its location or operation from the requirements of any public agency exercising proper jurisdiction.~~ **NIGHT BURNING:** If an owner or operator chooses to perform burning at night the following conditions shall be met:

304.1 No incinerator, burn-off oven or crematory ~~burning~~ shall be conducted ~~burning between sunset after sundown and before sunrise, the following sunrise~~ unless a COMS is operating at all times during ~~night~~ burning.

304.2 The COMS shall be calibrated and maintained in accordance with EPA Performance Specification # 1 and shall be calibrated at least once per day if night burning is conducted. The COMS shall be located ~~after~~ (downstream from of) all ~~particulate~~ control equipment, ~~where condensed water is not present, prior to the stack exit, and prior to any dilution with ambient air except in crematories, free of interference from ambient light~~ (applicable only if transmissometeris responsive to ambient light) and accessible in order to permit routine maintenance in accordance with EPA Performance Specification 1.

304.3 No night burning shall be conducted until the owner or operator insures that a properly trained operator is present at all times. The operator shall be trained in proper operation and maintenance of the COM as well as shutdown procedures of the incinerator, crematory or

burn-off oven. Therefore if the COM is registering opacity readings that are above the opacity limitations in Section 302 of this rule. then the operator can shut down the operation.

305 ~~LIMITATION – PARTICULATE EMISSIONS:~~ ~~No person shall cause, suffer, allow or permit the emission into the atmosphere from any incinerator particulate matter which exceeds 0.1 grains per cubic foot (229 milligrams per cubic meter) of dry flue gas at standard conditions adjusted either to 12 percent carbon dioxide in the exhaust gases and calculated as if no auxiliary fuel had been used or to seven percent oxygen (O_2).~~ **REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT:** Any person incinerating or otherwise processing particulate emissions pursuant to this rule shall provide, properly install and maintain in calibration, in good working order and operation, devices that indicate temperatures, pressures, rates of flow, or other operating conditions necessary to determine if the air pollution equipment is functioning properly and is properly maintained. Records shall be kept pursuant to Section 501 that demonstrate that air pollution control equipment meets the overall control standard required by Section 300. If the air pollution control equipment consists of additional equipment other than an afterburner, such as a baghouse or venturi scrubber, then an Operations and Maintenance plan shall be submitted for approval to the Control Officer for each additional control system.

~~306 — LIMITATION – VISIBLE EMISSIONS:~~ ~~Notwithstanding the provisions of Regulation III, Rule 300 (Visible Emissions), no person shall cause, suffer, or allow the emission into the atmosphere from any incinerator for an aggregate of more than 30 seconds in any 60 minutes any air contaminant which is a shade or density darker than 20 percent opacity.~~

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 ~~INFORMATION REQUIRED:~~ ~~No incinerator shall be constructed, remodeled, installed or used until the following information, and any additional information the Control Officer may require, has been filed with and approved by the Control Officer, and then only in compliance with the requirements of these Regulations.~~ **COMPLIANCE SCHEDULE:** An owner or operator subject to this rule shall meet all applicable provisions of this rule by (insert 12 months after adoption).
In addition:

401.1 An owner or operator subject to this rule shall inform the Control Officer of the intention to use any additional equipment to control emissions other than an afterburner by (insert 6 months after the date of adoption of this rule) according to section 305 of this rule.

401.2 An owner or operator subject to this rule shall meet all applicable provisions of this rule by (insert 12 months after adoption). An owner or operator who plans to burn at night shall ensure that the COMS is installed properly according to design specifications, calibrated, and operated for a conditioning period of at least 168 hours minimum and an operational test period of 168 hours before night burning is performed. During this specific time period, the system shall be evaluated to determine performance specifications according to EPA Performance Specification 1.

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~~**401.1** Plans and specifications describing the capacity, amount and type of combustible refuse to be incinerated, proposed fuel, fire chamber and stack details, location of the incinerator with reference to adjacent premises, and auxiliary fuel controls.~~

~~**401.2** Procedures and equipment used to handle refuse and to charge the incinerator.~~

~~**401.3** Methods and equipment for preventing the discharge of contaminants into the ambient air.~~

~~**401.4** Receptacles for storage and means of disposal of residue.~~

SECTION 500 - MONITORING AND RECORDS

501 RECORDKEEPING: ~~The owner or operator of any incinerator subject to the provisions of this rule shall on each day of use record the total weight charged and~~

~~the hours of operation.~~ Recordkeeping requirements shall include the following types of information:

501.1 INCINERATORS shall keep records of the type of combustible material to be incinerated, total weight charged, chamber temperatures, dates and times of the day that the incinerator is operating.

501.2 BURN-OFF OVENS shall keep records of the type of combustible material to be burned, chamber temperatures, dates and times of the day that the burn-off oven is operating.

501.3 CREMATORIES shall keep records of the number of corpses cremated, chamber temperatures, dates and times of the day that the crematory is operating. The owner of an animal crematory shall account for either the weight of animal corpses charged or the number and type of corpse charged. In addition, if a human crematory burns a large corpse (over 300 lbs.), the approximate weight of the corpse **and the operating conditions** shall be noted.

501.4 NIGHT BURNING – If night burning is conducted, the owner or operator shall:

- a.** Install and operate the continuous opacity monitoring system (COMS) according to Performance Specification 1,40 CFR, Part 60.
- b.** Maintain a continuous record of opacity readings generated by the COMS. Records shall include all times that the meter is running properly. Records shall also indicate when the instrument is inoperative or has been adjusted or repaired.
- c.** The date and time identifying each period during which the COMS was inoperative, except for zero and span checks and the nature of system repair or adjustment shall be reported. The Control Officer may require proof of COMS performance whenever system repairs or adjustments have been made.

d. A file of all data collected by the COMS or as necessary to convert monitoring data to the units of the applicable standard.

502 RECORDKEEPING RETENTION: Copies of reports and supporting documentation required by the Control Officer shall be kept on site and retained for at least five years. Records and information required by this rule shall also be retained on site for at least five years.

503 COMPLIANCE DETERMINATION: When more than one different test method is permitted for a determination, any exceedance of the limits established in this rule determined by any one of the applicable test methods constitutes a violation of this rule.

503.1 For determining total particulate matter, EPA Methods 1 through 5 or their EPA alternates approved by the Control Officer shall be used. Both carbon dioxide and oxygen measurements shall be obtained simultaneously with each Method 5 run.

503.2 Determination of visible emissions compliance shall be made by a certified emissions observer using Method 9 or by a COMS (mandatory for night burning), which is maintained and calibrated in accordance with EPA Performance Specification 1.

504 TEST METHODS ADOPTED BY REFERENCE: The test methods as they exist in the Code of Federal Regulations (CFR), date of publication July 1, 2003¹, as listed in subsections 504.1 through 504.7, are adopted by reference. When more

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than one different test method is permitted for a determination, any exceedance of the limits established in this rule determined by any one of the applicable test methods constitutes a violation of this rule. These adoptions by reference include no future editions or amendments. Copies of test methods referenced in this Section are available at the Maricopa Environmental Services Department, 1001 North Central Avenue, Phoenix, Az. 85004-1942.

504.1 EPA Test Methods 1 (Sample and Velocity Traverses for Stationary Sources) and 1a (Sample and Velocity Traverses for Stationary Sources with Small Stacks), (40 CFR, Part 60, Appendix A).

504.2 EPA Test Methods 2 (Determination of Stack Gas Velocity and Volumetric Flow Rate), 2A (Direct Measurement of Gas Volume Through Pipes and Small Ducts), 2B (Determination of Exhaust Gas Volume Flow Rate from Gasoline Vapor Incinerators), 2C (Determination of Stack Gas velocity and Volumetric Flow Rate in Small Stacks and Ducts), and 2D (Measurement of Gas Volumetric Flow Rates in Small Pipes and Ducts), (40 CFR, Part 60, Appendix A).

504.3 EPA Test Methods 3 (Gas Analysis for Carbon Dioxide, Oxygen, Excess Air, and Dry Molecular Weight), 3A (Determination of Oxygen and Carbon Dioxide Concentrations in Emissions From Stationary Sources), 3B (Gas Analysis for the Determination of Emission Rate Correction Factor or Excess Air), and 3C (Determination of Carbon Dioxide, Methane, Nitrogen, and Oxygen from Stationary Sources) (40 CFR,Part 60, Appendix A).

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504.4 EPA Test Method 4 (Determination of Moisture Content in Stack Gases)
(40 CFR, Part 60, Appendix A).

504.5 EPA Test Method 5 (Determination of Particulate Emissions from
Stationary Sources) (40 CFR, Part 60, Appendix A).

504.6 EPA Test Method 9 ("Visual determination of the Opacity of Emissions
from Stationary Sources") (40 CFR 60, Appendix A).

504.7 EPA Performance Specification 1 ("Specification and Test Procedures For
Opacity Continuous Emission Monitoring Systems In Stationary
Sources"),(40 CFR, Part 60).

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